

## ABSTRACT

Polarization converter assemblies are utilized to provide switching and routing systems with effective coupling between a first and second router assemblies, and to provide polarization insensitive switching and routing systems. An improved optical switching/routing system of this invention includes a first router assembly, a second router assembly and a polarization converter assembly, each assembly optically aligned with one another, the polarization converter assembly being optically interposed between the first router assembly and the second router assembly. Embodiments of the polarization converter include, but are not limited to, liquid crystal spatial light modulators or half-wave retarders. A polarization insensitive switching and routing system of this invention includes a polarization separating sub-system, a selectable switching/routing sub-system, and a polarization combining sub-system. In one embodiment, the polarization separating sub-system includes a polarization splitter and a patterned polarization converter and the polarization combining sub-system includes a patterned polarization converter and a polarization combiner.